

ACADEMY OF PERFORMING ARTS IN PRAGUE

FILM AND TV SCHOOL

BACHELOR'S THESIS

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**To what extent can originality and authorship be
defined with the interference of Artificial Intelligence?**

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**Do jaké míry ovlivňuje umělá inteligence pojetí
originality a autorství?**

Gayoun Ji

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Oponent práce:
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Declaration

I declare that I have prepared my Bachelor's Thesis independently on the following topic: To what extent can originality and authorship be defined with the interference of Artificial Intelligence?

under the expert guidance of my thesis advisor and with the use of the cited literature and sources.

Prague, date: 30/04/2021

Signature

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Abstract in English

Questioning the originality of art to artificial intelligence (AI) is also the same as doubting the performance of developing technology over the human-power and the human-made. The world has turned into a heavily digitized space; its existence has become part of everyday life. However, artificial intelligence not only started to recommend contents and ring notifications for users, but they have started to learn how to see the world from their own perspective. To categorize, to recognize, and to use these analyses to create, and to create art is one of them. As Trevor Paglen says, "Something dramatic has happened to the world of images: they have become detached from human eyes. Our machines have learned to see without us..." (Paglen quoted in Strecker 2019). The emergence of AI as a "creative author" is not only about machine-making art, but rather questions the true meaning of "originality". How do we define the originality of art? Is it the artist or the pure creativity itself? Furthermore, if the algorithm is made by a database that was "provided" by human history, isn't art made by artificial intelligence also made by humans? What are the borders of authorship? And what will happen once people start admitting art made by the AI?

Abstract in Czech

Vliv umělé inteligence na pojetí originality umění je obdobný vlivu technologií na osatní lidské záležitosti. Svět se proměnil ve výrazně digitální prostor, jenž se stal nedílnou součástí každodenního života. Umělá inteligence však neslouží jen k tomu, aby doporučovala uživatelům obsahy, které mají konzumovat nebo aby jim nabízela notifikace šité na míru. Umělá inteligence se rovněž učí vidět svět ze své vlastní perspektivy, kategorizovat, rozpoznávat, analyzovat a na základě toho vytvářet. Mimo jiné vytvářet umění. Jak podotkl Trevor Paglen: "Cosi dramatického se odehrálo ve světě obrazů: obrazy se odpoutaly od lidského zraku. Naše stroje se naučily vidět bez nás" (Paglen v Strecker 2019). Zrod umělé inteligence jakožto "tvůrčí autorské bytosti" se netýká jen umění, jež je vytvářeno stroji, nýbrž zpochybňuje samotné chápání originality. Co je to originální umění? Jakou roli hraje v umění autor a jeho kreativita? A není, například, umělecké dílo vytvořené algoritmem na základě databáze lidmi vytvořených obrazů, zároveň výtvorem umělé inteligence a lidí? Jak vymezit, kdo je autorem? A co se stane, když přijmeme umění vytvářené umělou inteligencí jako rovnocenné umění, jež je vytvářeno lidmi?

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Introduction

Technology. It was an invention to maximize efficiency and minimize the inconvenience of everyday's routine. However, as Paul Virillio's quotation goes against the idea that inventions maximize efficiency:

"To invent the train is to invent derailment; to invent the ship is to invent the shipwreck.(Stevens, 2015)"

Innovation does not happen out of nowhere, perhaps it does, but for most of the time it is the humans' desire to survive and to live in a better world, to live in the imaginary that makes innovation happen. However, when the world changes so rapidly, some become *technophobic*, a sense of discomfort in coexisting, for instance with artificial intelligence (AI). Some of the reasons why artificial intelligence triggers fear could be the catastrophic visions of human-machine relationship could be traced back to the early "science-fiction" literature - Čapek's R.U.R., for example. On the other hand, it could be us, recognizing the AI as technology related to human ethics; concentrating on complex real-life situations and its possibility of making its own *choices*. The act of "making decisions" is rather humane and so machines now had that "humanity" in them.

The first encounter between digital technology and art could have been closely related to the age where the internet was introduced. The boom of digital and net art. Artists in that era, such as Namjoon Paik, Stelarc and many others, were experimenting with all sorts of media and thus, a new style of aesthetic have been established. However, as the new technologies were being commercialized to the public, that also provided the opportunity for everyone, anywhere to create due to the invention of smartphones and social media. Everyone in their pocket had their own bubble of network where their political status and unlimited image production and circulation was possible.

The use of AI has been applied in different mechanisms such as self-driving cars or Siri with the help of natural language processing (NLP) and image recognition.

But what was the connection between AI and art? In "AI Art" written by Joana Zylińska, AI was inspired by the pattern and repetition of how people perceive art. The way how we (re)produce the already-made beauty applied in many other contexts; bringing individuals self-satisfaction and also entertainment through so-called "AI imitation work" as known as "style transfer". Using this technology, an AI named AICAN created by Dr. Ahmed Elgammal, have created a printed series called "Faceless Portraits Transcending Time," which has been exhibited in the Chelsea gallery. Also, a reproduction of a portrait by the AI called "Edmond de Belamy, from La Famille de Belamy" had been sold for \$432,500 in New York. AI indeed has been making changes in the art scene, and of course, it follows up a crucial discussion about authorship, creativity and originality. Can artificial intelligence be creative? Create something new? If the image transfer is based on a data-base of human-made works of art, doesn't that mean AI art is also created by us? If AI starts creating art, does that mean there is no future in humans creating it?

Although technicians and scientists aim the AI to produce an output, there are artists vice versa who use the AI as a *tool* to shape their own output for instance, Trevor Paglen and Hito Steyerl. These two artists are known for questioning the pattern discrimination of the AI and their artworks focus on these questions. They observe the AI's behaviour and also use the perspective of the non-human. Then the question is, which is more "ethical"? AI as a tool or AI as an author? Which could be more original? What does the work of Paglen and Steyerl trying to tell us about this new technology?

The mixture of art and science have been a feature of how the world has been changing and an indication of how the world will be changing in the future. For some, it could be seen as a racing competition of AI and humans, but we have been living with technology ever since. As a matter of fact, humans need technology to live and so at this moment, rather than doubting the relation between us and machines, maybe it is time to think about how we can compromise and live together with these machines after all.

Perception of technology as medium

The vast discussion and debate about new media has been an ongoing topic in the art circles. The word *media*, which derives as a plural form of *medium*, initially refers to the variety of mass media, for instance, the magazine, newspaper, video, documentaries etc. However, as an artistic phrase, it refers to the *mechanism* of how the artwork is presented and displayed (Moran, 2009). It is hard to describe and fully define what new media art is, if it is a new sort of art, or if it is an artistic movement? Perhaps it could be correlating to both aspects which makes it even harder to describe its identity since its diversity and sub-genres under the frame of new media has been established through the artists' transition from the traditional medium to the digital media.

For a matter of fact, art has been closely related to world history, human behaviour and how we have evolved to society. Erwin Panofsky, the author of the essay *"History of Art as a Humanistic Discipline"* (1955), describes philosophy, music, poetry, history and literature as outputs caused by the correlation between art and classic humanism (Sampankou, 2017). The development of technology and industry, especially after the second world war and then after the Cold War, are the major historical epochs which constructed new media art's existence (Panofsky, 1955). It was not the new inventions which were introduced over time that made the artists to transit their mediums, but it was how gradually over time, the art medium was building its shape through the generation. In a publication called *WHAT IS (NEW) MEDIA ART?* by IMMA (*Irish Museum of Modern Art*) they note that:

"Innovative artists have always been interested in new media and materials. During the RENAISSANCE, artists' practice was transformed by the use of the new medium of OIL PAINT which provided artists with greater flexibility and versatility than TEMPERA. The introduction of the CAMERA OBSCURA contributed to new developments in perspective, and PRINTMAKING radicalised the notion of the unique or one-off artwork, establishing an early precedent for mass media communication. (Moran: 6)"

After the major inventions such as computers, televisions and radios were introduced, it was the notion that "the TV screen will permanently replace the canvas

from now on” (Arnason, 632) and this was when the FLUXUS artists distinguished themselves.

FLUXUS was an artistic, experimental avant-garde movement which occurred in 1960, when it was founded by George Maciunas (Tate, undated). Grasping the concepts of post-modernism and dadaism, FLUXUS has led its direction towards conceptual futurism and posthumanism. Furthermore, it was an international collective of artists from all over the world, especially from Germany, Japan and in America. “Maciunas, who was the leader” of the movement, voiced in his manifesto about the seven different meanings of the word “flux” (which also means to “flow”/ a word that is a part of the name “fluxus”) that FLUXUS shall...

“...purge the world of bourgeois sickness, “intellectual”, professional & commercialized culture, purge the world of dead art, imitation, artificial art, abstract art, illusionistic art, - PURGE THE WORLD WITH “EUROPANISM”!”
Nonetheless, he mentioned that FLUXUS aimed to *promote a revolutionary flood and tide in art. Promote, NON ART REALITY to be grasped by all peoples, not only critics, dilettantes, and professionals.* (Museum of Modern Art: 5)”

The members of FLUXUS included artists such as Nam June Paik, Yoko Ono and Joseph Beuys who made history in the field of art and are still being recognized to this day.

Although the movement was a collective, the artists’ works were individual and as far as it satisfied the criterias of “FLUXUS ” they were approved to be a part of it. They usually concentrated on the topics of discrimination in society, sexuality, and moreover using the everyday medium as to present their works (Museum of Modern Art). For instance, the most important works by Nam June Paik, also known as the father of video art at the present time, “Electronic Superhighway: Continental US, Alaska, Hawaii 1995”(Paik, undated) and “TV Budha, 1976” (Art Gallery of New South Wales, 1991) reflected on the use of familiar mediums (such as TV monitors and recording cameras) and also grasped the initials of contemporary and installation art. Art now was not only appreciated by its beauty nor its traditional medium

anymore. Rather, the concepts behind the artwork itself were the focal points of identifying “What is good art?”

The new media art distinguished itself as an innovation, a new genre and a whole new aesthetics; on the other hand, it has been probably the starting point of which the borders between identifying, valuing and corresponding with the work has been slowly demolishing.

“...art as technology would become the ultimate enemy of any art-based practice by ignoring the traditional content and manifestation of art. In addition, technology would not only affect the existence of various arts, but also the museography as such through the invention of digital galleries, interactive terminals placed in museums, electric objects, kickstarters and any other virtual devices. (Codreanu, 2014)”

Perception of art is described as:

“a complex relation between visual stimuli and a personal understanding of them. It is a theoretical postulate that aims to clarify the relation between artworks and individual opinions and evaluations. (Anapur, 2016) ”

This intimate and independent relationship between the reader and the author is heavily based on the individual traits; such as their age, race, experience in life and their own beliefs. The comprehension and intelligibility could differ, but in common we all analyze the work according to the medium being used.

For instance:



Image 1: (direction from left to right) Vincent Van Gogh, *The Starry Night*, June 1889, 74cm x 92cm, oil on canvas/ Andy Warhol, *Marilyn Monrow*, 1962, Screen print/ Michelangelo, *The Pietà*, 1498-1499, Marble, Sculpture

From the three works shown above, we all know that the first image is a *painting* by Van Gogh, second is a *screen print* by Andy Warhol and the last is a *sculpture* by Michelangelo. Even if we do not know the name of the artwork nor who the author is, we all have the ability to identify what it is by the use of technique or by the traditional medium (paint, brush, colors, texture...ect). Thus, this tells us that the visual language is a very sensitive matter of how we, as humans, comprehend an image.

It is true that the digital space offered grand opportunities for artists, but this also meant – as the numbers of those opportunities rose – the number of new branches of art rose parallely. It is especially worrying because new media art was “new” back in the day, but now when we live and are exposed to this digitalized world, new media is not a surprise anymore, and now we build up different concepts on top of that spectrum and those guidelines are too fine to be differentiated and to be recognised by the public. Furthermore, adopting itself into a form of contemporary art or even posthumanist art which is now known as “*the art of today*” (Master-Iesa, 2018).

The transcending numbers of genres/ titles within the school of contemporary art is probably one of the many reasons why this confusion is happening, and why it is hard for people to understand them. Unlike when it was clear to see the connection between the work and medium, “*the art of today*” rather emphasizes the meaning of the project itself than how this idea is presented through a medium. And now we have reached a point where people are exposed to art created by an AI, a machine. For some it may simply look like a clever machine making something *cool* and *new*,

for some it may look like a performance art as a whole, or for some, it may simply be considered “contemporary” because it is just easier to describe the uncategorizable field of art.

It is all a matter of perspective but it is highly doubtful that these perspectives will vaguely construct the upcoming aesthetics and how many more hybrids of technology will open up a new chapter in art history. The reason why this chapter has been introduced at the beginning of this paper is to think about how AI could be perceived this moment. The relationship of the viewer and the medium used for an artwork could be a connection of how the audience could understand the work. Thus, this chapter would like the reader to have in mind that if AI is a medium, what kind of medium it would be and what kind of connection it could bring to the audience. On the other hand, if it would become a genre itself, what kind of genre it would be and how we could define this genre.

Milestones in the history of AI

The concept of Artificial Intelligence (AI) has been around us for centuries and decades without us noticing. It is just that it hasn't been as developed as now, but the ongoing research and development of science and philosophy around creating an 'intelligent robot', rather, a 'humanized robot' has been pushed forward throughout history. Although back in the days maybe it was an attempt of experiment and research about creating this algorithmic system, or even just an ancient mythology, but the perspective towards the AI at the present time is rather a mixed feeling of facing the unknown and excitement of creating the new. As artificial intelligence starts to integrate different aspects of everyday life, it almost feels like a paratization of robotics into humanity and humanology. How did we get until to this point? When did the study of artificial intelligence begin? By whom and why? Moreover, how could we understand the role of AI and its relation to the art?

Adrienne Mayor, a researcher in the department of classics in Stanford University, claims the first concept of AI has already been introduced in the mythology of ancient greek. Based on her last publication "*Gods and Robots: Myths, Machines, and Ancient Dreams of Technology*" she says the first appearance of the self-moving machines/ robots were first mentioned in the poets by Homer and Hesiod, for instance the tale of Talos (700 B.C). In the mythology, Talos is described as a "*weaponized robot*", almost acting like a soldier, which was assigned by Zeus to protect an island by the Crete invaders, and was made by Hephaestus, also known as the blacksmith and the god of weapons. It is said that Talos had a "mysterious fluid acting as a life source (Shashkevich, 2019)" called *ichor* and could be destroyed when this fluid is damaged from the body (Shashkevich, 2019).

Although we cannot clarify the identity of the imaginary Talos it is interesting to see the questions and attempts of "what makes a human?" and "how could we make the "new" us?" have already been asked even before the beginning of modern technology. It is hard to define the specific beginning of AI, but going back in time to the 1950s, where the interest of technology and industry was so concentrated, could be the beginning of such.

Alan Turing, a researcher of ML (machine learning), has proposed the so-called "The Turing Test" in 1950. The inquiry of "can machines be intelligent?" was the beginning of how this test was "invented", and the concept was said to be inspired by the "Imitation Game". The procedure of the test was very simple, consisting of three participants, the AI, the questioner (human) and a responder (human). Throughout the test, the questioner asks both the responder and the AI the same questions which each of their answers are sent back to the questioner. When the repetition of asking and receiving are completed, the questioner chooses who's response might come from a human without knowing which participant sent the answers. In the end of the test when the questioner chooses answers from the AI to be relevant as from a human, then the result of the test is said that AI is so called "intelligent". Although the Turing test was a great attempt to examine AI's level of intelligence, there has also been harsh criticism regarding that the test is not reliable and too simple. Since the questions asked by the questioner is dependent on the questioner itself, AI which receives more questions which are answered with "yes" or "no" are more likely to pass the test than those who receive an open-end question where the answer is much more complex and comprehensive. Due to this reason alternatives have been introduced such as the "Reverse Turing Test", "Total Turing Test" and "Minimum Intelligent Signal Test". Furthermore, other AI tests have been produced in order to test the AI which are meant for other areas of fields- for instance "The Lovelace Test 2.0", a test to examine the ability of AI creating art, will be discussed later in this paper (Gillis, 2019)."

1956, a conference in Dartmouth college regarding artificial intelligence was hosted. John McCarthy, a mathematician in the Dartmouth college at the time, was the first person to officially appoint the word so called "artificial intelligence" which in fact, Trenchard More, a fellow researcher regarding the AI, was not a fan of the words "artificial" nor "intelligence". Although it is known as a conference, it was rather recognized as a summer project, referred to AI@50, which aimed to discuss and debate for further investigation of how technology could drastically evolve throughout the next 50 years. The first meeting in 1956, most of the members had strong independent opinions and visions on how and what kind of additional studies they needed for improvement- for instance, Oliver Selfridged commented that the study of linguistics and symbols were essential in developing AI to the next step. In AI@50 in 2006, there was a mass debate on how the AI will function- for example, some of the

debates where if the AI will be logic based or probability based. Moreover, they expressed their personal views regarding the future field of AI (Moor, 2006). The study of AI was both exhilarating for both the public and those who were actually studying it. As Herton Simon, an American social scientist (Herbert, undated) says:

“It is not my aim to surprise or shock you- but the simplest way I can summarize is to say that there are now in the world machines that can think, that can learn and that can create. Moreover, their ability to do these things is going to increase rapidly until- in a visible future- the range of problems they can handle will be coextensive with the range to which the human mind has been applied(Goodreads, undated).”

The more the public's expectations were hyped up by the articles of mass media, it was rather difficult for the professionals in the area to get more out of it. In fact, the two time periods which failed to this response were called the “AI Winter”. In relation to the historical period of the 1950s, the development of the AI studies were financially supported by the US Defense Establishment (also known as DAPRA). DAPRA and the government had high hopes that the AI technology, especially its translation technology, would play a very important role in translating Russian to English during the Cold War. However; after the 1956 Dartmouth Conference, as John McCarthy expressed *“(the) main reason the Workshop did not live up to my expectations is that AI is harder than we thought (Shashkevich, 2019)”* it highly doubted the progressive enthusiasm faced the harsh reality. On the other hand, in 1957, the invention of perceptrons by Rosenblatt was a ray of hope to not lose the potential. However; in 1969, as Minsky and Papert published a book called “perceptrons” which were heavily based on criticizing Rosenblatt's investigation and 1973, the publication of The Lighthill report by British Science Research Council voicing that *“... no part of the field have discoveries made so far produced the major impact that was then promised (Shashkevich, 2019)”* was a decisive moment of which led to the first AI Winter. The consequences were harsh, as the UK government cut funding in university studies on the AI and DAPRA concentrating on projects with already existing AIs rather than investing in its future (Shashkevich 2019).

The second AI Winter was very much expected and predicted by the professionals after they have experienced the first one. There has always been a worry of running low on the funding which will cause the research to stop for a period of time and also, it was hard to say that the second AI Winter will not happen. As in the AAAI conference in 1984, scientists expressed in one voice *“I think it is important that we take steps to make sure the AI winter doesn’t happen...”* (Shashkevich 2019) The core problem for raising up the second AI Winter was that the expert system faced its limitations in common sense of reality. In the 1980s in order to gain back the interest of AI, the field had tried to build focus in connection to the public market and commercializing. The newly introduced “expert system” was a mass data of algorithms gained by surveys from different professionals which led this technology to corporate areas such as medication, geography and electric science. The only issue was as mentioned, as John McCarthy criticized, the system lacked a sense of reality and realness. For instance, when the system is asked for the right medication for a Cholerae Vibrio patient, the system suggests two week medication of tetracycline which would result in killing all the bacteria but also killing the patient as well which we do not want. As so, the machine had to prioritize which is important in that given situation. The failure of the system once again brought darkness in funding, and also cognition to function with the AI (Schuchmann 2020).

The progression of AI has come through a long history in which it faced its own risks, failure and also enlightenment of how the future may look. The interest in human philosophy applied in science and technology aims at the success or conceivably a proof of superior human knowledge and proof of their conceited manner. It is surely inevitable to face the AI since it has seemingly blended into our life, such as Siri, self-driving cars, translators, smartphones...etc but now it is a question of what will come next? And how will it affect us in living in society and interacting with people? Maybe those questions are yet to be answered in a close future.

Defining originality and authorship

Defining originality and authorship is a boundless topic which could lead to various comprehension and directions. It is also an attempt of unsolving the undefined and defining a mass collective of opinion and debate on this question. Perhaps it is to further question rather than answer with the will of distaste. Questioning a question could be the key to finding the answer. Where could we even start to define originality and authorship? And what could be their correlation? How do they affect each other and how would their definition and its value change when interfered with science and technology? Furthermore how would it affect the mechanism of originality and authorship? In order to see these changes, the discussion will be divided into two parts where in this first part, it will talk about how originality and authorship were perceived whereas the second part will take after more chapters about the relationship with AI and art to see how these perceptions change and challenge to answer the unresolved questions and thoughts.

Originality, authorship and creativity are closely related to each other since none of one could exist if one is missing. It is also a description of a process which provokes each other. For instance, originality can provoke creativity and creativity can provoke originality. Authorship cannot exist without creativity nor originality and vice versa. They hold a strong existence and belonging of each other. The feeling of interest and excitement comes from discovering the new. Us as humans, we have always directed ourselves forward and created something we have never seen, an innovation. This was not only in technology but in the art scene as well. The appreciation of the never presented beauty was the amazement people appreciated and longed for.

Section 1: Creativity and originality

In the book “The creativity code” written by Marcus du Sautoy, Boden, a philosopher, suggests there are three types of creativity: exploratory, combinational and transformational creativity. “Firstly, the *exploratory creativity*, of which 97 percent of humans’ creative process functions, is described as the extension of what already exists and brings it to a broader sense. For example, the music of Bach was one of

the first to introduce baroque music until other famous composers such as Mozart and Beethoven broadened and stabilized the genre. Other examples in the field could be mathematics and science – since these are subjects which need previous knowledge applied in order to extend and research for new formulas and laws. Secondly, *combinational creativity* is simply a hybrid method of when two independent ideas mix to create something new and construct another framework. Thirdly, *transformational creativity* is one of which Borden says to be the most mysterious and undefinable. It is unexplainable because it is an unexpected “game/phase changers (Sautoy, 2019).” It has been described by phrasing:

“...Think of Picasso and cubism. Schoenberg and atonality. Joyce and modernism. They are phase changes, like when water suddenly goes from liquid to gas or solid (Sautoy 2019 :18).”

Probably it is odd since it is the most unexpected event to happen in a linear expectation of what we assume will be predicted to see and approach. Perhaps it is the most original and creative of all since it is purely affected by the author himself and with no integration. However, as mentioned in the first paragraph of the chapter, the relationship between creativity and originality is a balanced parallel which provokes each other. In order to realize the realism of originality, it is a must to understand the components which build the creativeness and its functions leading to “originality”. So what is the difference between originality and creativity? Is there a difference or is there not?

The three creative types suggested by Boden could be a descriptive analysis of how the process of creating could happen; almost like a formula. It sounds pretty easy to make something new out of it if followed by these rules and concepts but unfortunately, it is not as “Paul Crowther mentions the importance of *“aesthetics enjoyment...two extremes of beauty and sublimity... the balance of unity and diversity in a sensible configuration”*. In his writing “Creativity and originality in art” published in October 1991, Paul suggested a different aspect of how creativity and originality could be seen. He especially focuses on the perceptions, the aesthetic and the excellence of the artwork. Firstly, the circumstances of which the creativity leads to originality is the key idea (not originality leading to creativity). Followed by the difference between creativity and originality. Paul describes that creativity is the

sense of norm by the creator and originality is by the observer, who perceives that authenticity.

“Original art therefore enables us to achieve a distinctive aesthetic mode of empathy with the Other, by virtue of the fact that its enjoyment is disinterested. (Crowther 1991 : 2)”

The significance of this idea is that not only can constructing the new could be done accordingly like mathematics and science, but the role of aesthetics and the uniqueness of the work carries the standards of pursuing excitement and enjoyment in contact with art- identifying them as originality and creativity.

Concerning this “uniqueness”, its origination could be coming from two distinctive points of view. The first, is of course the *originality* of the work produced, *“...an artefact not only fulfills its distinctive definitive function successfully, but does so in an out of ordinary fashion”*, and the second, the author who produces this original work- for instance, Paul as an example presented Shakesphere. It is mentioned that there in the flow of history and time, and a bit of luck, this uniqueness can pay off the quality of the work:

“For every invention or discovery in the field of science or technology, or new set of reasonings of concepts in any branch of knowledge, to count as original refinements or innovations, we do indeed need a gifted individual or ensemble placed in the right historical circumstances (Crowther 1991 : 2)”

This right moment of timing not only gives the merit in fame, but in relation to authorship, it gives a great power on the name of the author itself. What is meant by this is for example, in this present moment, let's say that we have heard of a play, a script or even a piece of poem we've never heard of but only knew that it was by Shakesphere. There would be still some kind of trust, identification or even a kinship *only because it is by Shakesphere* - not only Shakesphere but also it goes with other famous artist back in the days like Vincent Van Gogh, Pablo Picasso...etc leaving a trace in the art history is indeed powerful without doubt. (Crowther 1991: 2)”

Section 2: Authorship

Based on a conference document resume written by Ede Lisa...

“An author is one who struggles with and through language to create something new, a text that embodies, however imperfectly, the writer’s intentions. (That readers bring their own interests and intentions to an author’s text, and thus create their own meanings, most teachers would agree.) And the word authorship, like “ownership” or “professorship,” simply reflects an appropriate and necessary connection between authors and their texts (Lisa 1985 : 2).”

The reason why authorship is important is perhaps due to the ability to protect their own artwork from non permissioned reproduction and its circulation. Nonetheless, it is not only about the field of arts, but also in many other fields of knowledge such as in literature and music. It is much better to understand the historical events and thoughts which constructed the concept of authorship rather than to focus on the word itself. The word authorship could be more well explained in-relation to how this “originality” given by an author could affect the society and the way we perceive art.

Going back to the age of 1933 ,the event which would like to be discussed is the Nazi book burning. “During the book burn it is said that over 25.000 books were burnt written by Jews. Some of the recognized authors were Albert Einstein and Ernest Hemingway. (PBS, undated)” This historical event is one of the examples which shows what kind of power an authorship could have and how the “name” of the author could make one perceive their work. The Nazi oppression against the Jews is well known from its historical context but the oppression against a specific authorship is which would like to be addressed. The question follows for the Nazi, “who wrote these books?” and “whose opinion and expression do they come from?” directing them to refer to authorship as purely the author of the work itself. Moreover, it let them judge the book by Jews as simply “books written by Jews' ' not as intellectual. The authorship not only makes the public judge about the work itself, but also to predict and assure the quality of the author’s original work.

A more simple example would be the numerous research papers and articles floating around the internet. Given an academic paper from a student and a doctoral degree, which paper would be more appealing? Hence, authorship is not only about the author itself, but also determines the political statue in society. We all know and we believe that the more a person has experience in education, this education leads to deeper knowledge, and we accept that knowledge as reliability of the work given by this author. Reliability is another important factor of determining authorship. It is even for this paper- would this paper be reliable if I would be using only blogs and reviews from the internet? Or reliable if there would be a well mixed-balance of books, essays, notes from conferences and also materials from the internet?

Another perspective would be the ability to protect your own art (work), it is usually known to be “copyright protected”. “Copyright legally permits and acquires the authorship of their artwork and has the ability to authorize and give accessibility of the artwork on their choice of decision. It is a merit for any artist to have their artworks under copyright since it is a legal protection and nevertheless, even if the artwork is sold, the right of copyright still lies under the author (Kenton 2020).” The criterias of which works could be copyright protected are these following points:

1) It must be your original work: it must originate with you and show some minimal amount of creativity.

2) It must be fixed in a tangible object, such as paper, a canvas or a digital medium. It cannot merely be an idea for a work of art. (Haskins 2020)”

The question now is that does AI satisfy all these criterias? Is AI reliable enough to be used for an academic source or a reference? How could AI protect its own work and be protected by legal rights? Does the fact that AI making art plant an idea of some stereotype or judgement?

Relationship between art and AI

It is a matter of fact that numbers of artists are leaving the traditional medium and transferring into the virtual world. The endless opportunities and space where the traditional could be replaced with a simple click on the mouse is tempting. Science and technology was greater than expected and had more power of which could even transform the society and culture whom no one expected. Finally it is now possible to see artworks even made by the AI. Since when and how was this possible? What are the artworks made by the AI and what are the differences with those that are human-made? Is there or will there be competition between humans and AIs? How powerful is the correlation between art and AI compared to other AI influence over other fields of study?

After the high disappointment of the Turing test, another testing method has been introduced to evaluate the quality of AI called the “Lovelace test 2.0”. “The Lovelace test, named after Ada Lovelace, also known as the first female computer programmer (Bibliography.com 2021), was developed during the 2000s by Bringsjord and his team which investigated the concepts of computer science. Unlike the traditional Turing test, in order to make up for the disadvantages it carried, the Lovelace test presented another standard of evaluations which used “creativity” as the key-criteria to assess the abilities of AI. The procedure of the test was simple, as it questioned the AI to create a piece of original work –it could be a poem, a script of a play, a painting...etc but this creative process made by the AI must be unexplainable by the creator. The test purely wanted to examine the indescribable and mysterious flow of mind works made by humans applied in robotics like AI, and to see if they could manipulate it. Moreover, it questioned and stimulated the interest if AIs could produce an output without any calculated input of mechanics and engineering (Pearson 2014).” During an interview in Mind Matters News with Robert J. Marks and Selmer Bringsjord as a guest had a discussion of whether the well-known AlphaGo would pass the Lovelace test. Alpha Go, also known as the first computer algorithm program to play the traditional Go game, won its match which took place in March 2016 with the famous 18-title Go master, Lee Sedol in Seoul (Deepmind 2016). Lee, after the match commented...

“I thought AlphaGo was based on probability calculation and that it was merely a machine. But when I saw this move, I changed my mind. Surely, AlphaGo is creative (AlphaGo, undated).”

On the other hand, Bringsjord expressed his opinion on this issue that AlphaGo is...

“...bit different because machine learning plays a significant role and the machine is approximating the function by running a gradual process that we also can't follow...I think that AlphaGo was trained to play Go and that's exactly what it is. It's what the programmers designed it to do (News 2020).”

Thus, this further allows us to understand that the degree of passing the Lovelace test is not only about the original creativity itself but also whether this creativity was intentional or not and whether it was calculated or not. Perhaps that is why Bringsjord argues that AlphaGo cannot be necessarily considered as a creative AI because the purpose of using the systematic algorithm is so clear and intentional – to win the Go game. To do so, the AI will use all its power to calculate and analyse; which is not a natural, unplanned magic of the creative process.

However; it does not mean all AIs are like AlphaGo. For instance, “the art AI named “AICAN” created by Dr. Ahmed Elgammal was considered as the biggest art achievement in 2017 according to Artsy editorial (AICAN + Ahmed Elgammal, undated). “AICAN is an algorithm which produces its own artwork generated by visual information provided by its creator rather than educating the system to produce an expected work of art. It is said that AICAN went through 80,000 images, and with the use of these images, AICAN produces its own work using its visual data. Nonetheless, Dr. Elgammal also referred to the strategy in creating AICAN as the creative adversarial network (Ahmed Elgammal Professor, 2020).”

“The Creative Adversarial Network (CANs) is an algorithm based on the Generative Adversarial Networks (GANs). The hypothesis of this system was first introduced by Rutgers aiming to produce an apparatus as similar as the anticipation of humans. GANs are based on two neural networks; a generator and a discriminator. Similarly like the Turing test or hence the Lovelace test, the job of the

generator is to create an image, and the discriminator's job is to identify whether the image is just a reproduction or purely made by the AI. CANs on the other hand, as the name itself suggests, has to consist of the creative aspect of it. The AI can manipulate two images for example into one as a result, but then there also have to consist of an idea which is solely from the AI. The Rutgers researchers commented on the motivation that

“Too little arousal potential is considered boring, and too much activates the aversion system, which results in negative response (Thoult 2017).”

Some of the reasons why CANs were successful in surprising the audience would also be due to the fine difference between neural image transfer technology, simply known as style transfer. “Style-transfer is a computer technology which uses two images to operate it into one where the first consists as a “context image” and the other “technique image”.



Image 2: Example of an style transfer

As shown on the image above, the left is a painting of the King of Hearts named “The Painted Ladies” used as a context and the technique would be the famous painting by Vincent Van Gogh “The Starry Night” (Thompson 2019). By mimicking these two paintings, the output presents a new type of painting where as if painted by Vincent Van Gogh. Although this usage of technology may seem creative, the problem of perceiving these images are broad. The primary problem is indeed the mass commercialization of this mechanism. Although it would have been rather a shock when it was first introduced, it is now a very normal entertainment of using this “filter” on our smartphone cameras. There is no excellence in who can create a

style-transferred image due to the wide range of access. This leads to the second problem which is the aesthetics. Still using the image as an example, what do we think about the author of the image? Who do we recall first? The person who used the style-transfer to create this image or the more well known Vincent Van Gogh? It would without doubt be Vincent Van Gogh. The more power the name of the artist or the artwork has, and especially if they are taught in the art institution and education, it is very easy to make the images feel “kitschy” and non-original because the viewer would already know about the existing original work/ author. It may only act as a source of entertainment but it is hard to say it is “creative” or “original”, or as “art” in general. It is solely perceived as an image. This difference between CANs and style-transfer is what makes AICAN functionable as it eliminates this “kitschiness” and has a potential in creating its own. Here are some examples of works by AICAN:



Image 3: examples of works by AICAN from official website of AICAN:
(direction from left to right) Link between heaven and Earth, 2018, 120 x 120cm / Unity Rising, 2018, 100 x 100cm,/ Last Hope, 2018, 100 x 100cm,

Defining originality and authorship part.2:

Identifying AI (AI as a tool vs. AI as an author)

Now the question is to contemplate the position of the AI. Would AI be considered as an art-making machine/tool or would be accepted as an author? It would also depend on the perception of how us, humans, accept this weirdly humane robot. It is essential to argue there are two perspectives to answering this inquiry- to see the opportunity of commercialization and in point of law and to see AI as a tool or as an author. The clash between influence on society and the fixed legislative law of copyright oppression on computer generated AI. Moreover, it's also about the matter of ethics and morals of how authorship could be preserved in coexistence with both human and engineered authors.

What are the chances of any individual owning an Art AI to make art for themselves or for any reason? Although high technologies in connection with every day life is easily seen — through smartphones (natural language processing eg. Siri and Alexa), self-driving cars...etc , these are those types of technology which try to practically help us save time and secure safety. On the other hand, Art AIs are different, as it relatively is in connection with satisfaction, entertainment, expression, and most importantly, emotions. “Continuing the discussion with AICAN, its founder Dr. Ahmed Elgammal, described AICAN as his collaborator because he cannot expect what kind of work it will produce and so he accepts AICAN as an author itself. According to the statistics, 75% of the audience did not recognize the difference between human-made artwork and AI made artworks. Additionally, one of its work called “St.George Killing the Dragon” has been sold in November 2017 in NewYork auction for \$16,000 (Ahmed Elgammal Professor 2020) ” and ““ Portrait of Edmond Belamy” had been sold for \$432,500 (Person 2018)”. Anyhow, does that mean that AICAN be an author? Or would it just be a praise of appreciation by Dr. Elgammal towards his beloved creation?

According to the copyright protection law on art by AIs/ computer generated, it is said:

“503.03(a) Works-not originated by a human author.

In order to be entitled to copyright registration, a work must be the product of human authorship. Works produced by mechanical processes or random selection without any contribution by a human author are not registrable. Thus, a linoleum floor covering featuring a multicolored pebble design which was produced by a mechanical process in unrepeatable, random patterns, is not registrable. Similarly, a work owing its form to the forces of nature and lacking human authorship is not registrable; thus, for example, a piece of driftwood even if polished and mounted is not registrable (Shlackman 2018).”

In order to have a legal power and a protection of art established by AI, they always need a human author which will represent themselves. Then for instance, work generated by AICAN would be registered under Dr. Elgammal or if not, be not registered. Although there is a valid reason for this statement. “For example, if one of the authors (AI) would like to sue an opponent for “copying” its work, the computer cannot sue the opponent. The presence in the supreme court has to be presently existing, but the computer algorithm is not possible to do so. In contrast, it is true that more and more AI generated art is being presented which means that there also would need adjustments on the copyright according to the society that is present. The power of copyright has an immense influence over the originality and authorship;

“If an AI-generated artwork is not protected by copyright, anyone can freely make copies of it, distribute it, use it for commercial purposes or sell it to others (Matulionyte 2020).”

It is a worrying sign and a crucial evidence that AIs realistically cannot own a status as an author, on the other hand it is also a matter of individual moral/ethical aspect on this topic of how the individuals would opinion about it.

Then which kind of works could be under the copyright law? Moreover, be able to show a clear collaboration between an artist and AI? One of the well known artists for expressing their beliefs and using AI as a tool are Hito Steryle and Trevor

Paglen. “First of all, Hito Steyerl is a German based artist, cinematographer and a theoretician born in 1966. Hito in her artworks, likes to elaborate the topics about capitalism, mass media, artificial intelligence and questions surrounding an image. Her fearless opinions about artificial intelligence are which have been appreciated by many other artists and the audience (Hito Steyerl, undated).” “Trevor Paglen is also a German based artist who is profound of the mass collection of datas and images and its effect on society. Nonetheless, he tackles the perspective of the world in the eyes of artificial intelligence (LensCulture, undated).” The difference between the two – AI as an author and AI as a tool – is that when AI is used as a tool, there could be a questioning, a reasoning, a sense of acknowledgement. However; when AI as an author creates art, it is hard to question the “Why?”. The motivation behind the work does not explore any aspect of cultural, personal or collective experiences we share while living in the same society. It just creates because it needs to and by the simple click by its creator to assign it.

Especially because we have tried so much to produce this art generating AI and algorithm, by even programming a test to study the “intelligence” of such, it would be rather disappointing if the AI is not accepted as an author by the audience. As the rise of contemporary art is growing, the vision of art is not built up from the medium itself, but the idea behind, and the concept which were dedicated in order to produce an artwork is the more important aspect of artisanship. AICAN’s work could be seen appealing because it is good, but on the other hand, the popularity of it could be because it is made by AI. The interest among the audience will increase because for all this time they were exposed to art made by humans, but now there are “others” who can produce art as well. Thus, the act of AICAN making art could not only be seen as “an author making art” but comparatively seen as an “reflective conceptual performance of human behaviour”

Conclusion

“Issac Asimov, an American writer known for his science fiction novels and robotic series, in his book called “I, robot” stipulated three moral laws for the robots (Issan Asimov 2021).”

“ 1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.

2. A robot must obey the orders given to it by human beings, except where such orders would conflict with the First Law.

3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law (Salge 2017).”

The three laws given have been applied in Asimov’s novel but until this day, these laws are considered as the foundation and reference to understanding robotic morals.

Humans have come a long way in moving forward. We have always directed ourselves to the new and our deep interest in knowledge was how innovation could have happened. Artificial Intelligence in our present time is still not stable. There are still negotiations we have to make in order to understand and blend in with this new technology like Asimov mentions that neither of the candidates will be in harm.

Art is a very special genre and a cultural experience which humans can experience. It is very open to any individuals and its excellence is that it is created by the creativity of any mankind on the planet. It is the most purest expression and the most honest confession. Unlike mathematics, art is not built up on a formula. Where humans are called an animal of emotions, AIs are just an engineered systemized copy of how humans act and do. They could perhaps detect and identify the physical movement and behaviour but creativity is only privileged for humans. And so it is just a matter of whether humans become more creative and progressive since AI’s algorithms are based on human creative achievements. This however does not mean that art produced by AI is bad or good. Depending on the audiences’ perspective, its art could be inspiring and interesting but the most important question is if it is inspiring because the art itself is, or interesting due to the fact that the author of the

work is an AI. What is the difference then? The difference would be that if the artwork itself is appealing, then it might mean the chances of success and even a commercialization of AI art. On the other hand, if the work is appealing because it is made by the AI, then it could mean seeing the act of AI and seeing that it is rather interesting than its artwork. AI will be a progressive art, but will always be behind human creativity unless half of the population would be robots living with humans – that would be a different story.

In an article published online on Dazed magazine one can read:

“Hito says that’s a fairly ridiculous reaction and actually, the real issue we face right now is artificial stupidity, which manifests in both armies that are able to produce fake news or sway elections. She suggests that this stupid form of AI, that just engages large numbers of people online, really impacts how people think, and that this is a much greater issue than the potential emergence of a single super AI intent on annihilating humankind (Dazed 2018).”

Though it is hard to define creativity and authorship, on a personal note, creativity is an idea and authorship is the ability to protect your own idea. However; when interfered with AI, creativity is an idea without any sort of calculation or heavy knowledge of art and authorship is the ability to legally protect that idea and work. The more we get connected to the non-humane, the more human a human becomes in order to preserve and protect ourselves. It is not the fear of physical harm but it is the fear of fall in society and identity. There is no guarantee that the improvement of technology will slow down or even speed up. The most important thing is to see whether this improvement is a cause of destruction of our own culture and establishing the new, or could be a new chapter while maintaining what we have preserved throughout history.

List of illustrations

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Image 2:

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